Yian Su, Ph.D. Candidate

yiansu2018@u.northwestern.edu
linkedin.com/in/yian-su
yiansu.com
@yiansu

Education

Sep. 2021 – present
Ph.D., Northwestern University, Computer Science.
Advisor: *Simone Campanoni*
Research Interest: *Parallelizing & Optimizing Compilers, Runtime Techniques, Heterogeneous Systems.*

Sep. 2018 – Jun. 2020
Master's, Northwestern University, Computer Science.
GPA: 4.0/4.0
Advisor: *Simone Campanoni*
Thesis: *A Better Memory Understanding for Program Dependence Graph through Static-Value Flow Analysis.*

Sep. 2017 – Jun. 2018
University of Illinois at Chicago, Electrical and Computer Engineering.
Senior-year Exchange Program.
GPA: 4.0/4.0
Advisor: *Vladimir Goncharoff*
Project: *Intelligent Shopping Cart.*

Sep. 2014 – Jun. 2017
Bachelor's, Northeastern University (China), Computer Science.
GPA: 4.34/5.0
Ranking: 1/195

Publications

Conference Proceedings

1. J. Giordani, Z. Xu, E. Colby, *et al.*, " Revisiting Computation for Research: Practices and Trends," in *2024 SC24: International Conference for High Performance Computing, Networking, Storage and Analysis SC*, Los Alamitos, CA, USA: IEEE Computer Society, 2024, pp. 1097–1110. DOI: 10.1109/SC41406.2024.00076.

2. **Y. Su**, M. Rainey, N. Wanninger, *et al.*, "Compiling loop-based nested parallelism for irregular workloads," in *Proceedings of the 29th ACM International Conference on Architectural Support for Programming Languages and Operating Systems, Volume 2*, ser. ASPLOS '24, La Jolla, CA, USA: Association for Computing Machinery, 2024, pp. 232–250, ISBN: 9798400703850. DOI: 10.1145/3620665.3640405.

3. Z. Xu, Y. Chon, **Y. Su**, *et al.*, "Prompt: A fast and extensible memory profiling framework," in *Object-oriented Programming, Systems, Languages, and Applications*, ser. OOPSLA '24, 2024.

4. A. Matni, E. A. Deiana, **Y. Su**, *et al.*, "Noelle offers empowering llvm extensions," in *Proceedings of the 20th IEEE/ACM International Symposium on Code Generation and Optimization*, ser. CGO '22, Virtual Event, Republic of Korea: IEEE Press, 2022, pp. 179–192, ISBN: 9781665405843. DOI: 10.1109/CGO53902.2022.9741276.

5. C. Wang, **Y. Su**, L. Zhou, S. Peng, Y. Yuan, and H. Huang, "A virtual network embedding algorithm based on hybrid particle swarm optimization," in *Smart Computing and Communication*, Cham: Springer International Publishing, 2017, pp. 568–576, ISBN: 978-3-319-52015-5.

Talks

May. 2025 **The Parallel-Semantics Program Dependence Graph and Its Use in Parallel Optimization**.
Research Talk, Northwestern University.

May. 2024 **Compiling Loop-Based Nested Parallelism for Irregular Workloads**.
Paper Presentation, ASPLOS'24.

Dec. 2023 **Effectively Scheduling Nested Fork-join Parallelism with Irregular Workloads**.
Liberty Research Group, Princeton University.

Effectively Scheduling Parallel Programs over Parallel Architectures.
Ph.D. Qualifying Exam, Northwestern University.

Jul. 2023 **Democratizing Heartbeat Scheduling via Heartbeat Compiler**.
The Constellation Project Workshop, Northwestern University.

Work Experience

Sep. 2024 – Mar. 2025 **HPC Compiler Intern,** NVIDIA Corporation.
Implemented an HPC compiler that reduces engineer effort for writing accelerator-specifc, less portable parallel program using JIT compilation techniques and MLIR framework.

Jun. 2020 – Sep. 2021 **Software Development Engineer,** Amazon.com.
Collaborated with front-end and research teams, implemented and launched a product recommendation widget worldwide on the Amazon website.

Jun. 2019 – Sep. 2019 **Software Development Engineer Intern,** Amazon.com.
Designed and implemented an automated data pipeline to generate a new feature in Amazon's search process to decrease the search defects rate.

Teaching Experience

Sep. 2019 – Dec. 2019 **Teaching Assistant,** Northwestern University.
Introduction to Database Systems and Data Warehouse.

Skills

Programming Languages C, C++, Python, Java, Markdown, LaTeX.
Softwares LLVM, MLIR, Git, VS Code, Jupyter Notebook.
Sports Soccer.
Instruments Violin.

Miscellaneous

Awards

Apr. 2024 **Travel Grant**, ASPLOS'24.
May 2018 **Winner**, Computer Engineering Category at UIC EXPO 2018.
Nov. 2017 **National Scholarship**, Northeastern University.
Nov. 2016 **National Scholarship**, Northeastern University.

Miscellaneous (continued)

Activities

Sep. 2024 **Associate Concertmaster**. Tualatin Valley Symphony.

Jan. 2024 **Associate Concertmaster**. Northwestern Philharmonia.

Sep. 2018 **Vice President of Membership**. Northwestern Toastmasters Club.

Apr. 2016 **Vice President**. International Communication Club @ Northeastern University.